



## Do levels of airborne grass pollen influence asthma hospital admissions?

**Author(s):** Erbas B, Chang JH, Dharmage S, Ong EK, Hyndman R, Newbigin E, Abramson M  
**Year:** 2007  
**Journal:** Clinical and Experimental Allergy : Journal of The British Society for Allergy and Clinical Immunology. 37 (11): 1641-1647

### Abstract:

**BACKGROUND:** The effects of environmental factors and ambient concentrations of grass pollen on allergic asthma are yet to be established. **OBJECTIVE:** We sought to estimate the independent effects of grass pollen concentrations in the air over Melbourne on asthma hospital admissions for the 1992-1993 pollen season. **METHODS:** Daily grass pollen concentrations were monitored over a 24-h period at three stations in Melbourne. The outcome variable was defined as all-age asthma hospital admissions with ICD9-493 codes. The ambient air pollutants were average daily measures of ozone, nitrogen dioxide and sulphur dioxide, and the airborne particle index representing fine particulate pollution. Semi-parametric Poisson regression models were used to estimate these effects, adjusted for air temperature, humidity, wind speed, rainfall, day-of-the-week effects and seasonal variation. **RESULTS:** Grass pollen was a strong independent non-linear predictor of asthma hospital admissions in a multi-pollutant model (PEuro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)0.01). Our data suggest that grass pollen had an increasing effect on asthma hospital admissions up to a threshold of 30 grains/m<sup>3</sup>, and that the effect remains stable thereafter. **CONCLUSION:** Our findings suggest that grass pollen levels influence asthma hospital admissions. High grass pollen days, currently defined as more than 50 grains/m<sup>3</sup>, are days when most sensitive individuals will experience allergic symptoms. However, some asthmatic patients may be at a significant risk even when airborne grass pollen levels are below this level. Patients with pollen allergies and asthma would be advised to take additional preventive medication at lower ambient concentrations.

**Source:** <http://dx.doi.org/10.1111/j.1365-2222.2007.02818.x>

### Resource Description

#### Exposure : ☒

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Meteorological Factors, Precipitation, Temperature

**Air Pollution:** Allergens, Ozone, Particulate Matter, Other Air Pollution

**Air Pollution (other):** NO<sub>2</sub>;SO<sub>2</sub>

**Temperature:** Fluctuations

# Climate Change and Human Health Literature Portal

## **Geographic Feature:**

resource focuses on specific type of geography

Urban

## **Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Australasia

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Respiratory Effect

**Respiratory Effect:** Asthma

## **Resource Type:**

format or standard characteristic of resource

Research Article

## **Timescale:**

time period studied

Time Scale Unspecified